IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: JAMES ZU-CHIA TENG

Serial No.:   10/709,416   Group Art Unit: 2168

Filed: 5/04/2004   Examiner: Dangelino Gortayo

Title: *An Efficient Locking Protocol for Sub-Document Concurrency Control Using Prefix-Encoded Node Identifiers in XML Databases*

<div align="center">**REPLY BRIEF**</div>

Attn: Board of Patent Appeals and Interferences
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Appeal Brief filed 12/19/2007, the Examiner's Answer dated

3/17/2008 (which was incomplete), and further in view of the second Examiner's Answer dated

04/03/2008, Applicants submit the following reply.

REMARKS

This Reply Brief is in response to the Examiner's Answer dated 3/17/2008. Reconsideration of this application is respectfully requested in view of the foregoing remarks. In addition, all of the arguments in the appeal brief of 12/19/2007, and prior responses should also be considered in support of the claimed elements provided in the present invention.

STATUS OF CLAIMS

Claims 1-21 are pending.

Claims 1-3, 5, 12-14 and 19-21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Bray et al. (U.S.P. 6,529,905).

Claims 4, 6-11 and 15-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bray et al. in view of Sadjadi (U.S.P. 6,850,938).

RESPONSE TO EXAMINER'S ANSWER

The Examiner on pages 3-4 of the Examiner's Answer dated 03/17/2008, states that "prefix encoded nodes" "mean a node having information that identifies its parent". The Examiner further states that the arguments set forth in the Examiner's Answer are "based on this interpretation". Applicants respectfully disagree with the Examiner's interpretation as it is incorrect. It appears that the Examiner has interpreted a newly created definition for "prefix encoded nodes" so that it can be used in the anticipation argument of Bray et al. Prefix based encoding schemes are known in the art; however, the prior art is silent regarding the application of such a prefix encoding scheme in assigning Node IDs for nodes in a hierarchically structured document. Specifically, according to the Applicants' invention, each node in a hierarchical document is assigned a prefix encoded NodeID and the prefix encoded nodes allows us to exploit

"a property in which a current node ID is comprised of node IDs of ancestor nodes along the path from the root to a current node." The Examiner's citation of Figure 3 fails to reveal ANY **encoding**. This specific point with respect to the absence of encoding or prefix encoding was made in the Appeal Brief filed previously, but the Examiner has NOT addressed such an absence of prefix encoded nodes.

Further, on pages 4-5 of the Examiner's response of 03/17/2008, the Examiner states that Bray et al. specifically teaches Applicants' step of *implicitly deriving, from an explicit lock request, a set of locks for said determined ancestor nodes*. For support of this statement, the Examiner states that column 5, lines 41-44 of Bray teaches such a feature. Column 5, lines 41-44 is reproduced below:

> "It should be noted that lock checking 22 must be performed as an atomic operation, meaning that, once started, lock checking must be completed prior to the locking manager 12 beginning another action."

The above-mentioned citation by the Examiner merely teaches that the **lock checking, once started, has to be completed prior to taking other action**. This citation in no way conveys to one of ordinary skill in the art an *implicit derivation from a lock request*, let alone **an** *implicit derivation* of a set of locks for ancestor nodes *from a lock request*. Applicants made this point in the previously filed appeal brief, but **the Examiner has once again failed to show where in the Bray et al. reference is there such an implicit derivation of locks associated with ancestor nodes, and has further failed to show wherein in the Bray reference is there a teaching for such ancestral lock information being derived from an explicit lock request**. Further, Applicants maintain that Bray et al. locking manager merely teaches a continuous (i.e.,

without interruption) lock checking operation and makes no mention of such a locking manager making any implicit derivation of locks associated with the ancestor nodes based on a explicit lock request. Applicants, therefore, maintain that the Bray et al. reference, at best, teaches checking existing lock modes associated with nodes between a given node and the root node, but make no mention of implicitly deriving locks for ancestral nodes based on a lock request.

Again, in Applicants' invention, it should be noted that such implicit derivation is possible because of the nodes being "prefix encoded nodes". Specifically, such derivations are only possible because we exploit the fact that prefix encoded nodes always comprise node IDs of ancestor nodes along the path from the root to a current node, which allows the present invention to "*derive implicitly* from said explicit lock request, a set of locks for said determined ancestor nodes". Bray's construct, as evidenced by Figure 3, fails to provide for such encoding, and one of ordinary skill in the art would recognize that from the structure shown in Figure 3, one cannot derive the locks associated with ancestor nodes from an explicit lock request targeting a particular node.

Further, on pages 5-6 of the Examiner's response of 03/17/2008, the Examiner states that Bray et al. specifically teaches Applicants' step "**comparing said derived set of implicit locks with existing lock modes**". It is once again respectfully submitted that since the Examiner has failed to show the implicit derivation of locks for ancestral nodes, it would be erroneous to suggest that the Bray et al. reference teaches the feature of a **comparison** of a derived set of implicit locks with existing lock modes. The Examiner, in the Examiner's answer of 03/17/2008, states that column 7, lines 13-50 of the Bray et al. reference teaches this feature. Applicants respectfully maintain their disagreement with this statement. Specifically, column 7,

lines 13-50 of Bray et al. merely teaches that **an edit lock is denied if the parent of a node is already locked**. However, absent from Figure 6 and the accompanying description of Bray et al. is a teaching for a _**comparison step**_ wherein the **derived set of implicit locks are _compared with existing lock modes associated with ancestral nodes_**.

Hence, at least for the reasons set forth above, Applicants respectfully maintain that the Bray reference fails to teach or suggest many of the features of the claim 1.

The above-mentioned arguments for independent claim 1 substantially apply to independent claim 12 as it recites an article of manufacture that stores computer readable program code that implements the steps of independent claim 1. Hence, at least for the reasons set forth above, Applicants respectfully state that the Bray reference fails to teach or suggest many of the features of the claim 12.

Similar to claim 1, claim 19 also recite the feature of _**prefix encoded nodes**_ **in a hierarchically structured document** and further recites the features of _**deriving**_ **a set of implicit locks** _**from the node**_ and _**comparing**_ **the derived set of implicit locks with existing lock modes for the ancestor nodes**. Thus, for at least the reasons provided above with respect to claim 1, Applicants urge that Bray also does not teach every feature recited in independent claim 19, and, therefore, does not anticipate these claims as meant under 35 USC §102(b).

Similar to claim 1, claim 20 also recite the feature of _**prefix encoded nodes**_ **in a hierarchically structured document** and further recites the features of **deriving from said explicit lock release, a set of implicit lock modes for said determined ancestor nodes**. Thus,

for at least the reasons provided above with respect to claim 1, Applicants urge that Bray also does not teach every feature recited in independent claim 20, and, therefore, does not anticipate these claims as meant under 35 USC §102(b).

Applicants' claim 21 also teaches the features of *implicit derivation* **of a set of locks for said determined ancestor nodes from said explicit lock request**, (c) **a comparison of** *said derived set of implicit locks* **with** *existing lock modes for said determined ancestor nodes*. Thus, for at least the reasons provided above with respect to claim 1, Applicants urge that Bray et al. also does not teach every feature recited in independent claim 20, and, therefore, does not anticipate these claims as meant under 35 USC §102(b).

At least the reasons provided above with respect to claims 1, 12, 19, and 20, Applicants urge that Bray also does not teach every feature recited in independent claim 21, and, therefore, does not anticipate these claims as meant under 35 USC §102 (b).

The above-presented arguments also substantially apply to the dependent claims as they inherit all the features of the claim from which they depend. Further, Applicants respectfully maintain that the Sadjadi reference fails to remedy any of the above-identified shortcomings of the Bray et al. reference.

SUMMARY

None of the references, cited or applied, provide for the specific claimed details of applicants' presently claimed invention, nor renders them obvious. It is believed that this case is in condition for allowance and reconsideration thereof and early issuance is respectfully requested.

As this Reply Brief has been timely filed within the set period of response, no petition for extension of time or associated fee is required. However, the Commissioner is hereby authorized to charge any deficiencies in the fees provided to Deposit Account No. 09-0460.

Respectfully submitted,

/ramraj soundararajan/

Ramraj Soundararajan
Registration No. 53,832

IP Authority, LLC
4821A Eisenhower Ave
Alexandria, VA 22304

May 19, 2008